Iot Instant Contactless Covid Testing Booth Automation

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Abstract-- In view of current pandemic Covid testing plays a key role in fighting the pandemic. The main aim of this project is to design a completely automated instant contactless Covid testing booth system by which person details is monitored using RFID technology. This project makes use of micro controller. It acts as heart of the project. This onboard computer can efficiently communicate with the output and input modules which are being used. We use controller memory to dump some set of assembly instructions. When the micro controller gets the data from the RFID Reader, Automatically the tag details related to the person along with the sample collection details will be sent as an SMS along with the test results to the stored mobile number. The system also provide both audible and visual alerts using LCD and Buzzer.

During the pandemic period, testing of Covid is a key role in order to fight the contagious virus. It is quite significant that this Covid testing is being carried out only in the Covid testing centers, but there are a lot of disadvantages with regard to manual testing methodology. The reason being some of the tests are time consuming and delayed, wherein it is subjected to human errors due to a large amount of sample collection.

Key Words -KVR microcontroller, Power supply, RFID tag, RFID reader, Wi-Fi ESP8266 module, GSM modem, etc.

1. INTRODUCTION

Internet of Things (IoT) is rapidly increasing technology. IoT is the network of physical objects or things embedded with electronics, software, sensors, and network connectivity. which enables these objects to collect and exchange data. In this paper, we are developing a system which will automatically test the person with covid instantly with contactless testing booth. This project makes use of an onboard computer, which is commonly termed as micro controller. It acts as heart of the project. This onboard computer can efficiently communicate with the output and input modules which are being used. The controller is provided with some internal memory to hold the code. This memory is used to dump some set of assembly instructions into the controller. And the functioning of the controller is dependent on these assembly instructions.

The design of this system is very much sensitive and should be handled with utmost care because interfacing RFID reader and GSM to the micro controller is sensitive. So every small parameter should be given high importance while designing the interfacing circuit because if we use single sided board then lot of parts are being used in a small space then it may be difficult to make a single sided board without jumping over traces with a cable. The main idea is to design a completely automated instant contactless COVID testing booth system by which person details is monitored using RFID technology. It is used for ensuring the person details like name, aadhar scan specific information by which the system totally isolates the test person from the user and also makes the process fast and error free by automating registration process too. When the Micro controller gets the data from the RFID Reader, Automatically the tag details related to the person along with the sample collection details will be sent as an SMS along with the test results to the stored mobile number. Thus we fully automate the Covid booth testing process, making it faster, safer and error free to help fight the pandemic in a better manner.

2. LITERATURE SURVEY

loT-based System for COVID-19 Indoor Safety Monitoring In this paper, we introduce an affordable

loT-based solution aiming to increase COVID-19 indoor safety, covering several relevant aspects: like contactless temperature sensing, mask detection, social distancing check. Contactless temperature sensing subsystem relies on Arduino Uno using infrared sensor or thermal camera, while mask detection and social distancing check are performed by leveraging computer vision techniques on camera-equipped Raspberry Pi. Jingyi Xiao Non-pharmaceutical Measures for Pandemic Influenza in Non-healthcare Settings Personal Protective and Environmental Measures review the evidence base on the effectiveness of non-pharmaceutical personal protective measures and environmental hygiene measures in non-healthcare settings and discuss their potential inclusion in pandemic plans although mechanistic studies support the potential effect of hand hygiene or face masks, evidence from 14 randomized controlled trials of these measures did not support a substantial effect on transmission of laboratory-confirmed influenza.

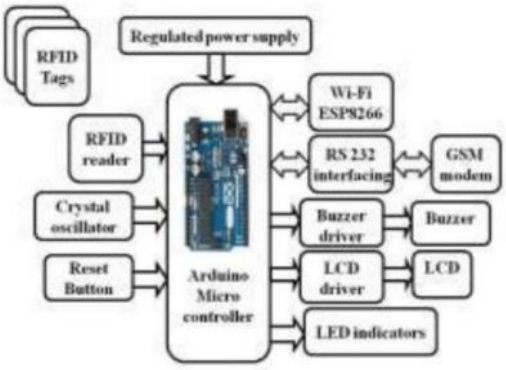
Sujithraa Sampath, Respiratory viruses like coronavirus disease (COVID-19) spread when mucus or droplets containing the virus get into your body through your eyes, nose or throat. The virus can spread from one person to the next, if a healthy person touches a surface which was previously touched by an infected person. With this system in place, you can turn on or turn off your room lights just by entering or leaving the room.

Eftychios G. Christoforou, Medical telerobotic systems: current status and future trends This study presents a systematic review of the relevant literature between the years 2004 and 2015, focusing on medical tele operated robotic systems which have witnessed tremendous growth over the examined period. A thorough insight of tele robotics systems discussing design concepts, enabling technologies (namely robotic manipulation, telecommunications, and vision systems), and potential applications in clinical practice is provided, while existing limitations and future trends are also highlighted.

3. IMPLEMENTATION

IOT INSTANT CONTACTLESS COVED TESTING BOOTH AUTOMATION

3.1 Block diagram



The design can be implemented with following as we No need for separate registration, the system uses RFID technology for instant aadhar card scan registration details monitoring. The Test person provides the sample number of the person from inside the booth using provided RFID tag. The system uses buzzer to inform patient that his test is done and next person to come forward. The data collected by the time is transferred over to Lab using IOT ESP8266 Wi-Fi module automatically before next person comes ahead. The lab in-charge can view the no of samples tested in real time and can update sample test results too on IOT server through Wi-Fi module. When lab in-charge updates test result of a sample, an SMS using GSM modem is instantly sent to the respective person by the system itself. Thus we fully automate the Covid booth testing process, making it faster, safer and error free to help fight the pandemic in a better manner. This project makes use of an onboard computer, which is commonly termed as micro controller. It acts as heart of the project. This onboard computer can efficiently communicate with the output and input modules which are being used. The controller is provided with some internal memory to hold the code. This memory is used to dump some set of assembly instructions into the controller. And the functioning of the controller is dependent on these assembly instructions.

4.CONCLUSION

The existing model presents an Integrating feature of all the hardware components which has been used and developed in it with Arduino. The Presence of each and every module has been reasoned out and placed very carefully. Hence the contributing to the best working unit for "IOT INSTANT CONTACTLESS COVID TESTING BOOTH AUTOMATION"

Secondly, using highly advanced IC's with the help of growing technology, the project has been successfully implemented. Thus the project has been successfully designed and tested.

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